

## MNEMONICS OPTIMUS RAD – R/F – C all versions

### MNEMONIC

#### explanation

signal chain (- direct connection, = connection via relay contact) all possible units mentioned

signal value / range / signal source

measuring point (in ( ) at PCB front panel)

trigger point [preferred]

remarks

part of supply

### AC\_0V\_XG

AC mains supply 0 V X-ray generator

ENX1101:2-EZX13:2-EZ102X1:DBZ4-EZ119X1:DBZ24 Optimus RAD

ENX3201-EZX13:2-EZ102X1:DBZ4-EZ119X1:DBZ24 Optimus R/F

neutral N of mains supply for EZ102 + EZ119

### AC\_230V\_L1

AC mains supply 230VAC phase 1

ENF2:L1-ENF2:T1-ENK2:2-ENK2:1-EZX13:1-EZX102X1:DBZ2

AC mains supply for low voltage power supply EZ102

### AC\_230V\_L2

mains supply 230V AC phase 2

ENF2:L2-ENF2:T2-ENK2:4-ENK2:3-EZX13:3-EZ119X1:DBZ26

AC mains supply for function unit mA\_control EZ119

### AV\_HT\_AN

high tension actual value anode side

0V...+3.75V = 0...75kV 1V = 20kV

measuring point EZ130 (X4)

[CRTL\_X\_C/ at EZX74]

### AV\_HT\_CA

high tension actual value cathode side

0V...+3.75V = 0...75kV 1V = 20kV

measuring point EZ130 (X5)

cathode value also positive !

[CRTL\_X\_C/ at EZX74]

### AV\_HT

high tension actual value

0...+7.5V = 0...150kV 1V = 20kV

measuring point EZ130 (X3)

[CRTL\_X\_C/ at EZX74]

### CAN\_H

generator CAN high active

-EZ119X2:C3-EZ130X2:C3-EZ139X2:C3-EZ150X2:C3-EZX44:10-EZX45:10-EZX46:10-

-C300X1:10-EZX51:3-EZX151:3-EZX52:7-EZX72-

-EWAX51:10-EWAX52:10-EWA100X2:C3-EWBX51:10-EWBX52:10-EWB100X2:C3-

+2.5VDC standby, +3.2VDC during communication

EZX72

for communication of generator function units only

part of: XRG bus

### CAN\_L

generator CAN low active

-EZ119X2:A3-EZ130X2:A3-EZ139X2:A3-EZ150X2:A3-EZX44:2-EZX45:2-EZX46:2-

-C300X1:2-EZX51:2-EZX151:2-EZX52:2-EZX71-

-EWAX51:2-EWAX52:2-EWA100X2:A3-EWBX51:2-EWBX52:2-EWB100X2:A3

+2.5VDC standby, +1.5VDC during communication

EZX71

for communication of generator function units only

part of: XRG bus

#### CM\_EX\_SW\_1

common for exposure switch of release decade 1

EWA100X1:C5-EWAX1:10

EWB100X1:C5-EWBX1:10

+26V non-active

exposure request

#### CM\_EX\_SW\_2

common for exposure switch of release decade 2

EWA100X1:C7-EWAX2:10

EWB100X1:C7-EWBX2:10

+26V non-active

exposure request

#### CM\_EX\_SW\_3

common for exposure switch of release decade 3

EWA100X1:C9-EWAX3:10

EWB100X1:C9-EWBX3:10

+26V non-active

exposure request

#### CM\_EX\_SW\_4

common for exposure switch of release decade 4

EWA100X1:C11-EWAX4:10

EWB100X1:C11-EWBX4:10

+26V non-active

exposure request

#### CM\_SW

common for radiation indication

EZ150X1:C29-EZX1:6-EWGX1:6-EWGX2:6-EWGX3:6

partner of SW\_UN\_EX, potential free contact

#### CM\_TH

common for thermal sensor of tube housing

NTC temperature measurement in tube housing (not yet available)

EZ130X1:C12-EZX3:7-EWGX7:7-EWGX8:7-EWGX9:7 backpanel version 4512 108 05983

EZ130X1:C12-EZX3:4-EWGX7:4-EWGX8:4-EWGX9:4 backpanel versions 4512 108 05984 + 4512 108 09361/2

partner of TH\_OL

#### CM\_TH\_SW

common for tube housing temperature switch

EZ130X1:C11-EZX3:4-EWGX7:4-EWGX8:4-EWGX9:4 backpanel version 4512 108 05983

EZ130X1:C11-EZX3:7-EWGX7:7-EWGX8:7-EWGX9:7 backpanel versions 4512 108 05984 + 4512 108 09361/2

+26V when open, +1.7...3.3V when closed, < 1.7V will be detected as short circuit

partner of TH\_OL\_SW/

#### COM\_EX\_CD

common for exposure end signal and other warning signals

EWB102X1:A12-EWBX22:6

partner of EX\_CD + SW\_XG\_RD\_1 + SW\_PR\_FL\_1 + SW\_WN\_FL\_1 + SW\_UN\_EX\_1

#### CTRL\_X/

control X-ray request command, system level or with decade adaptation units WA/WB

EZ139X1:A4-EZX23:4-EZX45:5-EWAX51:5-EWAX52:5-EWA100X2:C25-EWBX51:5-EWBX52:5-EWB100X2:C25

0V active, +15V inactive

must be measured against PO\_0V in a Duo Diagnost system which feeds the signal bus

EZX85

part of: signal bus

#### CTRL\_X\_C/

control X-ray request command, internal generator signal

EZ119X2:C6-EZ130X2:C6-EZ139X2:C6-EZ150X2:C6-EZX52:8

0V active, +5V inactive

EZX74 as preferred trigger signal for kV measurement

final high tension on command if all conditions ready

part of: XRG bus, CAN/XS bus

CU\_CT1\_1  
cooling unit contact 1\_1  
EZ150X1:A22-EZX2:6-EWGX4:6=EGWX5:6=EWGX6:6

CU\_CT1\_2  
cooling unit contact 1\_2  
EZ150X1:C22-EZX2:7-EWGX4:7=EWGX5:7=EWGX6:7  
CU\_U  
stator current U  
high speed rotor control units 4512 104 71421/461  
EY100 X15  
9.3A/V

CU\_V  
stator current V  
high speed rotor control units 4512 104 71421/461  
EY100 X16  
9.3A/V

CU\_W  
stator current W  
high speed rotor control units 4512 104 71421/461  
EY100 X17  
9.3A/V

CV1 EN/  
CV2 EN/  
converter 1/2 enable  
converter 1: EZ130X1:A9-EZX24:22-EQ100X1:22  
converter 2: EZ130X1:A30-EZX34:22-E2Q100X1:22  
not used, no function

CV1\_GND  
converter power part 1 ground  
EZ130X1:AC8-EZX24:8/21-EQ100X1:8/21  
in combination with: CV2\_ID/ signal release 2 generators  
in combination with: CV2\_IDA/ and CV2\_IDB/ release 3 generators

CV1\_GND\_OL  
converter power part 1 ground overload (generator basic version >= 4512 104 70203/70602)  
EZ130X1:A7-EZX24:20-EQ100X1:20  
not used, no function

CV1\_ID/  
converter power part 1 identification  
EQ100X1:19-EZX24:19-EZ130X1:A6  
open +5V, converter connected 0V  
in combination with: CV1\_GND signal  
release 2 generators only

CV1\_IDA/  
converter power part 1 identification A  
EQ100X1:19-EZX24:19-EZ130X1:A6  
open +5V, converter connected +24mV  
in combination with: CV1\_GND signal  
release 3 generators only

CV1\_IDB/  
converter power part 1 identification B  
EQ100X1:21-EZX24:21-EZ130X1:C9  
open +5V, converter connected +24mV  
in combination with: CV1\_GND signal  
release 3 generators only

#### CV2\_IDA/

converter power part 2 identification A  
E2Q100X1:19-EZX34:19-EZ130X1:A27  
open +5V, converter connected +24mV  
in combination with: CV2\_GND signal  
release 3 generators only

#### CV2\_IDB/

converter power part 2 identification B  
E2Q100X1:21-EZX34:21-EZ130X1:C30  
open +5V, converter connected +24mV  
in combination with: CV2\_GND signal  
release 3 generators only

#### CV1\_OL/

converter power part 1 overload  
EQ100X1:7-EZX24:7-EZ130X1:C7  
not used, no function

#### CV1\_TM

converter power part 1 temperature  
EQ100X1:6-EZX24:6-EZ130X1:C6  
4.4V...1.5V = 20...100 degrees C  
in combination with: CV1\_GND signal

#### CV2\_GND

converter power part 2 ground  
EZ130X1:AC29-EZX34:8/21-E2Q100X1:8/21  
in combination with: CV2\_ID/ signal release 2 generators  
in combination with: CV2\_IDA/ and CV2\_IDB/ release 3 generators

#### CV2\_GND\_OL

converter power part 2 ground overload (generator basic version >= 4512 104 70203/70602)  
EZ130X1:A28-EZX34:20-E2Q100X1:20  
not used, no function

#### CV2\_ID/

converter power part 2 identification  
E2Q100X1:19-EZX34:19-EZ130X1:A27  
open +5V, converter connected 0V  
in combination with: CV2\_GND signal  
release 2 generators only

#### CV2\_OL

converter power part 2 overload  
E2Q100X1:7-EZX34:7-EZ130X1:C28  
not used, no function

#### CV2\_TM

converter power part 2 temperature  
EZ130X1:C27-E2Q100X1:6-EZX34:6  
4.4V...1.5V = 20...100 degrees C  
in combination with: CV2\_GND signal

#### DR\_BV\_0V

dose rate (signal) reference of image intensifier  
EZ61:3-EZ139X2:C18 backpanel 4512 108 05983/4 only  
negative potential of II unit, 0V +/-50mV against generator ground  
differential signal with DR\_BV\_SG  
not used, no function for generators release 2

#### DR\_BV\_NG

dose rate (signal) reference of image intensifier  
EZ61:6-EZ139X2:C18 backpanel 4512 108 09361/2 only  
negative potential of II unit, 0V +/-50mV against generator ground  
differential signal with DR\_BV\_SG  
part of: dose rate control

#### DR\_BV\_SG

dose rate signal of image intensifier  
EZ61:8-EZ139X2:A18 backpanel 4512 108 05983/4 only  
EZ61:4-EZ139X2:A18 backpanel 4512 108 09361/2 only  
positive potential, 0...10V  
differential signal with DR\_BV\_NG  
no function for generators release 2  
part of: dose rate control

#### DR\_FL\_LO\_1

dose rate fluoro lock-in 1  
EWBX12:7-EWB100X1:A21

#### DR\_FQ\_NG

dose rate signal (pulses) negative  
not used, no function

#### DR\_FQ\_PO

dose rate signal (pulses) positive  
not used, no function

#### DR\_LM

dose rate limiter  
EWBX12:1-EWB100X1:A20  
low\_active if tubelift D76 / EZD on short SID (if tubelift option present)

#### DR\_TV\_NG

dose rate of TV chain signal negative, fluoro control  
(II/TV\_adapter\_PCB\_X3:1-X2:8)-EZ61:8-EZ139X2:C19 backpanel version 4512 108 09361/2  
+/-12V minus polarity  
dual voltage differential signal  
typically +6V in standby coming from TV chain  
+V for more dose, -V for less dose, 0V stable image  
part of: dose rate control

#### DR\_TV\_NT

dose rate of TV chain signal negative, fluoro control  
EZ61:4-EZ139X2:C19 backpanel 4512 108 05983/4  
not used, no function

#### DR\_TV\_PO

dose rate of TV chain signal positive, fluoro control  
(II/TV\_adapter\_PCB\_X3:3-X2:7)-EZ61:7-EZ139X2:A19 backpanel version 4512 108 09361/2  
-/12V positive polarity  
dual voltage differential signal  
typically -6V in standby coming from TV chain  
-V for more dose, +V for less dose, 0V stable image  
part of: dose rate control

#### DR\_TV\_PT

dose rate of TV chain signal positive, fluoro control  
EZ61:9-EZ139X2:A19 backpanel version 4512 108 05983/4  
not used, no function

#### DS\_BV\_NG

dose (signal ramp) reference of image intensifier  
(II/TV\_adapter\_PCB\_X1:P-X2:3)-EZ61:3-EZ139X2:C17 backpanel version 4512 108 09361/2  
negative potential of II unit, 0V +/-50mV against generator ground  
differential signal with DS\_BV\_SG  
part of: dose rate control

#### DS\_BV\_0V

dose (signal ramp) reference of image intensifier  
EZ61:2-EZ139X2C17 backpanel 4512 108 05983/4  
not used, no function

#### DS\_BV\_SG

dose signal ramp of image intensifier signal

EZX61:7-EZ139X2:A17 backpanel version 4512 108 05983/4

(II/TV\_adapter\_PCB\_X1:R-X2:2)-EZX61:2-EZ139X2:A17 backpanel version 4512 108 09361/2

0...10V, polarity positive

differential signal with DS\_BV\_NG release 3 generators only

release 2 generators: not used, no function

part of: dose rate control

#### DS\_MC\_0V

dose (signal ramp) reference of selected measuring chamber

EZ150X2:C16-EZ139X2:C16

negative potential of selected measuring chamber, 0V +/-50mV against generator ground

differential signal with DS\_MC\_SG

#### DS\_MC\_SG

dose signal ramp of selected measuring chamber

EZ150X2:A16-EZ139X2:A16

0...+12V

[EZ150 X4 against X5 ground]

differential signal with DS\_MC\_0V

#### E\_NG\_CV1

E value converter DC supply negative

converter 1 (frontal 50/65/80kW): EQ100X1:5-EZX24:5-EZ130X1:C5

0...-12V = 0...-375V if converter is stand-alone (EQ100 X1 not connected)

if in normal operation:  $E_{PO} + E_{NG} \gg 445VDC = 10V$  measuring input EZ130 X1:A5 - X1:C5

#### E\_NG\_CV2

E value converter DC supply negative

converter 2 (rear 65/80kW): E2Q100X1:5-EZX34:5-EZ130X1:C26

no input to EZ130 release 2 generators

release 3 generators only with 2 converters

0...-12V = 0...-375V if converter is stand-alone (E2Q100 X1 not connected)

if in normal operation:  $E_{PO} + E_{NG} \gg 445VDC = 10V$  measuring input EZ130 X1:A26 - X1:C26

#### E\_PO\_CV1

E value converter DC supply positive

converter 1: EQ100X1:18-EZX24:18-EZ130X1:A5

0...+12V = 0...+375V if converter is stand-alone (EQ100 X1 not connected)

if in normal operation:  $E_{PO} + E_{NG} \gg 445VDC = 10V$  measuring input EZ130 X1:A5 - X1:C5

#### E\_PO\_CV2

E value converter DC supply positive

converter 2: E2Q100X1:18-EZX34:18-EZ130X1:A26

no input to EZ130 version 4512 108 08661..4 release 2 generators

release 3 generators only with 2 converters EZ130 version 4512 108 09102...4

0...+12V = 0...+375V if converter is stand-alone (E2Q100 X1 not connected)

if in normal operation:  $E_{PO} + E_{NG} \gg 445VDC = 10V$  measuring input EZ130 X1:A26 - X1:C26

#### EN\_X/

enable X-ray, system level

preparation or fluoro request, only valid in combination with CAN message (RAD-R/F) or hardware requests

(Optimus C)

EZ139X1:C2-EZX10:1/3-EZX23:15-EZX45:11-EZX46:11-C300X1:11-EWAX51:11-EWAX52:11-EWA100X2:C26-

EWBX51:11-EWBX52:11-EWB100X2:C26

measuring point: EZX82, EZ139X9

part of: signal bus

0V/+15V low active

must be measured against PO\_0V in a Duo Diagnost system which feeds the signal bus

#### EX\_CD

exposure end signal

contact to drive e.g. an external buzzer

partner of COM\_EX\_CD

#### EN\_X\_C/

enable X-ray, internal generator signal

preparation or fluoro request if confirmed by CAN message (RAD-R/F) or hardware requests (Optimus C)

EZ119X2:C7-EZ130X1:C7-EZ130X2:C7-EZ139X2:C7-EZ150X2:C7-EZX52:9-EZX76

0V/+5V low active

measuring point EZX76

driven by CU if EN\_X/ active (low)

part of: XS/XRG bus

#### EX\_ON

exposure on

EWA100X2:A9-EWAX14:7

EWB100X2:A9-EWBX14:7

potential free optocoupler driven signal

in combination with IT\_0V

supply: max 26V 10mA

part of: EXON old world

#### FD\_C\_CH1

central field measuring chamber 1

EZ150X1:C4-EZX21:12

+15V, Ri of EZ150 = 220 Ohms

#### FD\_C\_CH2

central field measuring chamber 2

EZ150X1:A4-EZX22:12

+15V, Ri of EZ150 = 220 Ohms

#### FD\_C\_CH3

central field measuring chamber 3

EZ150X1:C10-EZX31:12

+15V, Ri of EZ150 = 220 Ohms

#### FD\_C\_CH4

central field measuring chamber 4

EZ150X1:A10-EZX32:12

+15V, Ri of EZ150 = 220 Ohms

#### FD\_C\_CH5

central field measuring chamber 5

EZ150X1:C16-EZX41:12

+15V, Ri of EZ150 = 220 Ohms

#### FD\_L\_CH1

left field measuring chamber 1

EZ150X1:C3-EZX21:11

+15V, Ri of EZ150 = 220 Ohms

#### FD\_L\_CH2

left field measuring chamber 2

EZ150X1:A3-EZX22:11

+15V, Ri of EZ150 = 220 Ohms

#### FD\_L\_CH3

left field measuring chamber 3

EZ150X1:C9-EZX31:11

+15V, Ri of EZ150 = 220 Ohms

#### FD\_L\_CH4

left field measuring chamber 4

EZ150X1:A9-EZX32:11

+15V, Ri of EZ150 = 220 Ohms

#### FD\_L\_CH5

left field measuring chamber 5

EZ150X1:C15-EZX41:11

+15V, Ri of EZ150 = 220 Ohms

FD\_R\_CH1  
right field measuring chamber 1  
EZ150X1:C5-EZX21:3  
+15V, Ri of EZ150 = 220 Ohms

FD\_R\_CH2  
right field measuring chamber 2  
EZ150X1:A5-EZX22:3  
+15V, Ri of EZ150 = 220 Ohms

FD\_R\_CH3  
right field measuring chamber 3  
EZ150X1:C11-EZX31:3  
+15V, Ri of EZ150 = 220 Ohms

FD\_R\_CH4  
right field measuring chamber 4  
EZ150X1:A11-EZX32:3  
+15V, Ri of EZ150 = 220 Ohms

FD\_R\_CH5  
right field measuring chamber 5  
EZ150X1:C17-EZX41:3  
+15V, Ri of EZ150 = 220 Ohms

FI\_TF1\_1  
filament transformer 1 line 1  
EZ119X1:DBZ4-EZX12:1-EG106X15:1  
square pulses 100...20kHz, amplitude ~ 300V

FI\_TF1\_2  
filament transformer 1 line 2  
EZ119X1:DBZ6-EZX12:2-EG106X15:2  
square pulses 100...20kHz, amplitude ~ 300V

FI\_TF2\_1  
filament transformer 2 line 1  
EZ119X1:DBZ8-EZX12:4-EG106X15:4  
square pulses 100...20kHz, amplitude ~ 300V

FI\_TF2\_2  
filament transformer 2 line 2  
EZ119X1:DBZ10-EZX12:5-EG106X15:5  
square pulses 100...20kHz, amplitude ~ 300V

GND  
ground  
-EZ102X1:DBZ6-EZ119X1:DBZ26-EZ102X2:DBZ8/10/12/14/16/18/20/26/30-EZ119X2:AC4/5/13/15/16/32-  
-EZ130X2:C16:AC4/5/13/15/32-EZ139X2:AC4/5/13/15/32-EZ150X2:AC4/5/13/15/32-EZX21:13-EZX22:13-  
-EZX31:13-EZX32:13-EZX41:13-EZX12:3/6-EZX51:11/12/13/14/15-EZX151:X11/12/13/14/15-EZX44:1/7-  
-EZX46:8/13-EZX1:9-EZX2:10-EZX3:10-EZX5-EZX6-EZX7:3-EZX8:3-EZX17:2-EZX18:2-EZX19:2-EZX20:2-  
-EWGX11:4-EWGX12:4-EWGX1:9-EWGX2:9-EWGX3:9-EWGX4:10-EWGX5:10-EWGX6:10-EWGX7:10-  
-EWGX8:10-EWGX9:10-  
-EWAX41:2-EWAX42:2-EWAX51:15-EWAX52:15-EWAX1:7-EWAX2:7-EWAX3:7-EWAX4:7-EWAX11:2-  
-EWAX11:4-EWAX11:6-EWAX11:9-EWAX12:2-EWAX12:4-EWAX12:6-EWAX12:9-EWAX13:9-EWAX14:9-  
-EWAX21:10-EWAX23:10-EWAX24:1-EWAX24:10-  
-WA102X1AC2-WA102X2:AC15/28-  
-EWBX41:2-EWBX42:2-EWBX51:15-EWBX52:15-EWBX1:7-EWBX2:7-EWBX3:7-EWB4:7-EWBX11:2-  
-EWBX11:9-EWBX12:10-EWBX13:4-EWBX13:6-  
-EWBX21:6-EWBX22:10-EWBX23:10-EWBX24:1-EWBX24:10-  
-WB102X1AC2-WB102X2:AC15/28-  
-EYAX1:15/16/17-EYAX2:1-  
-EY100X1:11/12/13/14/15-EY100X13-EY100X41-  
-C200X1:2-C200X2:17/18/19/20-X100X1:17/18/19/20-C100X10-C100X2:6/7/8/9/10-C300X4:6/7/8/9/10-  
-C300X2:1/5-  
-EZ87- (cannot be used as signal ground at Duo Diagnost, only Optimus RAD-R/F)



GND\_15V

ground (+15V) for desk hand switch

C300X3:1/2/6

HT\_AN

high tension anode side actual value

EG100X14:2-EZX35:2-EZ130X1:C17

0...+10V = 0...+100 kV measured at 10kOhm (20kOhms measuring circuit parallel to 20kOhms kV\_control)

HT\_AN\_GND

high tension anode side ground

EG100X14:10-EZX35:10-EZ130X1:A17

0V

HT\_CA

high tension cathode side actual value

EG100X14:1-EZX35:1-EZ130X1:C16

0...-10V = 0...-100kV measured at 10kOhm (20kOhms measuring circuit parallel to 20kOhms kV\_control)

HT\_CA\_GND

high tension cathode side ground

EG100X14:9-EZX35:9-EZ130X1:A16

0V

I1\_1

partner of I1\_1/ optocoupler signal IGBT1 power part 1

EQ100 = 4512 108 05882 release 2

EQ100 >= 4512 108 08621 \* release 2

EQ100 >= 4512 108 09341 \* release 3

EZ130X1:A1-EZX24:14-EQ100X1:14

measuring point: EQ100 R25 end to X1 \* EQ100 X6

value: on = 3.7V off = 1.2V against ground \* = X10

I1\_1/

partner of I1\_1 optocoupler signal IGBT1 power part 1

EQ100 = 4512 108 05882 release 2

EQ100 >= 4512 108 08621 \* release 2

EQ100 >= 4512 108 09341 \* release 3

EZ130X1:C1-EZX24:1-EQ100X1:1

I1\_2

partner of I1\_2/ optocoupler signal IGBT2 power part 1

EQ100 = 4512 108 05882 release 2

EQ100 >= 4512 108 08621 \* release 2

EQ100 >= 4512 108 09341 \* release 3

EZ130X1:A2-EZX24:15-EQ100X1:15

I1\_2/

partner of I1\_2 optocoupler signal IGBT2 power part 1

EQ100 = 4512 108 05882 release 2

EQ100 >= 4512 108 08621 \* release 2

EQ100 >= 4512 108 09341 \* release 3

EZ130X1:C2-EZX24:2-EQ100X1:2

measuring point EQ100 R27 end to X1 \* EQ100 X7

value: on = 3.7V off = 1.2V against ground \* = X10

I1\_3

partner of I1\_3/ optocoupler signal IGBT3 power part 1

EQ100 = 4512 108 05882 release 2

EQ100 >= 4512 108 08621 \* release 2

EQ100 >= 4512 108 09341 \* release 3

EZ130X1:A3-EZX24:16-EQ100X1:16

#### I1\_3/

partner of I1\_3 optocoupler signal IGBT3 power part 1

EQ100 = 4512 108 05882 release 2

EQ100 >= 4512 108 08621 \* release 2

EQ100 >= 4512 108 09341 \* release 3

EZ130X1:C3-EZX24:3-EQ100X1:3

measuring point EQ100 R29 end to X1 \* EQ100 X8

value: on = 3.7V off = 1.2V against ground \* = X10

#### I1\_4

partner of I1\_4/ optocoupler signal IGBT4 power part 1

EQ100 = 4512 108 05882 release 2

EQ100 >= 4512 108 08621 \* release 2

EQ100 >= 4512 108 09341 \* release 3

EZ130X1:A4-EZX24:17-EQ100X1:17

#### I1\_4/

partner of I1\_4 optocoupler signal IGBT4 power part 1

EQ100 = 4512 108 05882 release 2

EQ100 >= 4512 108 08621 \* release 2

EQ100 >= 4512 108 09341 \* release 3

EZ130X1:C4-EZX24:4-EQ100X1:4

measuring point EQ100 R31 end to X1 \* EQ100 X9

value: on = 3.7V off = 1.2V against ground \* = X10

#### I2\_1

partner of I2\_1/ optocoupler signal IGBT1 power part 2

EQ100 = 4512 108 05882 release 2

EQ100 >= 4512 108 08621 \* release 2

EQ100 >= 4512 108 09341 \* release 3

EZ130X1:A22-EZX34:14-E2Q100X1:14

#### I2\_1/

partner of I2\_1 optocoupler signal IGBT1 power part 2

EQ100 = 4512 108 05882 release 2

EQ100 >= 4512 108 08621 \* release 2

EQ100 >= 4512 108 09341 \* release 3

EZ130X1:C22-EZX34:1-E2Q100X1:1

measuring point EQ100 R25 end to X1 \* E2Q100 X6

value: on = 3.7V off = 1.2V against ground \* = X10

#### I2\_2

partner of I2\_2/ optocoupler signal IGBT2 power part 2

EQ100 = 4512 108 05882 release 2

EQ100 >= 4512 108 08621 \* release 2

EQ100 >= 4512 108 09341 \* release 3

EZ130X1:A23-EZX34:15-E2Q100X1:15

#### I2\_2/

partner of I2\_2 optocoupler signal IGBT2 power part 2

EQ100 = 4512 108 05882 release 2

EQ100 >= 4512 108 08621 \* release 2

EQ100 >= 4512 108 09341 \* release 3

EZ130X1:C23-EZX34:2-E2Q100X1:2

measuring point EQ100 R27 end to X1 \* E2Q100 X7

value: on = 3.7V off = 1.2V against ground \* = X10

#### I2\_3

partner of I2\_3/ optocoupler signal IGBT3 power part 2

EQ100 = 4512 108 05882 release 2

EQ100 >= 4512 108 08621 \* release 2

EQ100 >= 4512 108 09341 \* release 3

EZ130X1:A24-EZX34:16-E2Q100X1:16

## I2\_3/

partner of I2\_3 optocoupler signal IGBT3 power part 2

EQ100 = 4512 108 05882 release 2

EQ100 >= 4512 108 08621 \* release 2

EQ100 >= 4512 108 09341 \* release 3

EZ130X1:C24-EZX34:3-E2Q100X1:3

measuring point EQ100 R29 end to X1 \* E2Q100 X8

value: on = 3.7V off = 1.2V against ground \* = X10

## I2\_4

partner of I2\_4/ optocoupler signal IGBT4 power part 2

EQ100 = 4512 108 05882 release 2

EQ100 >= 4512 108 08621 \* release 2

EQ100 >= 4512 108 09341 \* release 3

EZ130X1:A25-EZX34:17-E2Q100X1:17

## I2\_4/

partner of I2\_4 optocoupler signal IGBT4 power part 2

EQ100 = 4512 108 05882 release 2

EQ100 >= 4512 108 08621 \* release 2

EQ100 >= 4512 108 09341 \* release 3

EZ130X1:C25-EZX34:4-E2Q100X1:4

measuring point EQ100 R31 end to X1 \* E2Q100 X9

value: on = 3.7V off = 1.2V against ground \* = X10

## IT\_0V

emitter 0V exposure on signal

EWA100X2:C9-EWAX14:9

EWB100X2:C9-EWBX14:9

potential free optocoupler driven signal

in combination with EX\_ON

part of: EXON old world

## Iu

stator current phase U of Low Speed Rotor Control

measuring point EYAX22

10A/V

## Iw

stator current phase W of Low Speed Rotor Control

measuring point EYAX21

10A/V

## MN\_EM\_OF

mains power emergency off

EZX4:1-EZX47:6-EN100X1:6

## MN\_ON

mains on

C300X1:6-EZX46:6-EZX47:2-EN100X1:2-EZX44:14 Optimus RAD – R/F

CB100X10:3-EZX46:6-EZX47:2-EN100X1:2-EZX44:14 Optimus C

## NG\_15V

- 15 V supply Vee

EZ102X2:DBZ24-EZ119X2:AC12-EZ130X2:AC12-EZ139X2:AC12-EZ150X2:AC12-EZX21:6-EZX22:6-EZX31:6-

-EZ32:6-EZX41:6-EZX35:15-

-EZ51:8-EZX151:8-EG100X14:15-

-14.5V ..... -15.5V

## NR\_PR\_X/

not ready preparing for X-ray

EZ139X1:A3-EZX23:3-EZX45:4-EZX46:4-C300X1:4-EWAX51:4-EWAX52:4-EWA100X2:A24- EWBX51:4-

EWBX52:4-EWB100X2:A24

driven by CU and/or system controller

measuring point: EZX83

part of: signal bus

0V/+15V high active

must be measured against PO\_0V in a Duo Diagnost system which feeds the signal bus

#### PO\_0V

signal bus ground GNDS

EZ139X1:AC1-EZX23:1/14-EZX44:15-EZX45:15-EWAX51:15-EWAX52:15- EWBX51:15-EWBX52:15-

part of: signal bus

supply via X44 Optimus RAD+R/F, from Cockpit at Duo Diagnost systems

#### PO\_12V

+ 12 V supply

EN100X1:1-EZX47:1-EZX46:7-C300X1:7

#### PO\_15V

+ 15 V supply Vdd

EZ102X2:DBZ22-EZ119X2:AC11-EZ130X2:AC11-EZ139X2:AC11

-EZ150X2:AC11-EZX2:8/9-EZX35:7-EZX44:12/13-EZX46:5

-EZX51:7-EG100X14:7-C300X1:5

-EZX21/22/31/32/41:5 backpanel version 4512 108 05983 only

-EZX151:7 backpanel versions 4512 108 05984 + 4512 108 09361/2 only

+14.5V ..... +15.5V

#### PO\_15/40V

+ 15 V or + 40 V supply for measuring chamber

EZ150X1:A20-EZX21/22/31/32/41:5 EZ150 version >= 4512 108 05964

EZX21/22/31/32/41:5 via (15/40V Sub-D/3+ adapter) EZX21/22/31/32/41:L EZ150 version 4512 108 05963

#### PO\_26V

+ 26 V supply

EZ102X2:DBZ28-EZ119X2:AC14-EZ130X2:AC14-EZ139X2:AC14-

-EZ150X2:AC14-EZX1:5-EZX2:3-EZX3:9-EZX11:1-EWGX11:1-EWGX12:1-EZX17:1-EZX18:1-

-EQ100X2:1-E2Q100X2:1-

#### PO\_26V\_1

+ 26 V supply options

EZ102X2:DBZ32-EZX19:1-EZX20:1-

-EWAX1:4-EWAX2:4-EWAX3:4-EWAX4:4-EWAX41:1- EWAX42:1-EWAX23:9-EWAX24:5-EWA100X2:AC14-

-EWBX1:4-EWBW2:4-EWBX3:4-EWBX4:4-EWBX41:1- EWAX42:1-EWBX21:9- EWBX22:9- EWBX23:9-

-EWBX24:5-EWB100X2:AC14-

-EZX8:1 backpanel versions 4512 108 05984 + 4512 108 09361/2

#### PO\_26V\_RE

+ 26 V reverse supply

EWAW11-EWAW12-EWAX1/2/3/4:4-EWAX42:1

if generator and system release voltages don't match

normal condition: PO\_26V\_RE = +26V of generator against ground (jumper WA W11 + W13 closed, W12 open)

special condition: PO\_26V\_RE = 0V against -24V, supply from stand (jumper WA W11 + W13 open, W12 closed)

#### PO\_26V\_SW

+ 26 V supply switched, for cooling fan low voltage power supply

EZ102X1:D32-EZX7:1-EM1 backpanel versions 4512 108 05984 + 4512 108 09361/2

#### PO\_40V

+ 15 V or + 40 V supply for measuring chamber

EZ150X1:A20-EZX21/22/31/32/41:5 EZ150 version >= 4512 108 05964

EZX21/22/31/32/41:5 via (15/40V Sub-D/3+ adapter) EZX21/22/31/32/41:L EZ150 version 4512 108 05963

#### PO\_400V

+ 400 V supply measuring chamber

EZ150X1:AC1-EZX21/22/31/32/41:1

+400V , Ri of EZ150 = 100kOhms

#### PO\_5V

+ 5 V supply Vcc

EZ102X2:DBZ2/4/6-EZ119X2:AC1/2-EZ130X2:AC1/2-EZ139X2:AC1/2-EZ150X2:AC1/2-EZX46:9-C300X1:9-

EZX51:4/5/6-EZX151:4/5/6

+4.74V ..... +5.25V

#### PO\_V

signal bus supply

EZX23:13/25-EZX44:5-EZX45:7-EZ139X1:AC6

(V15S = -EWAX51:7-EWAX52:7-EWA100X2:AC27-EWBX51:7-EWBX52:7-EWB100X2:AC27-)

+15V Vsgn, supply via X44 Optimus RAD+R/F, from Cockpit at Duo Diagnost systems

part of: signal bus

#### POWERFAIL/

power fail signal of low voltage power supply, initiates warm-boot if supply voltage phase L1 drops below 196VAC

EZ102X1:D30-EZ139X1:A10

#### PW\_ON\_NG

relay power on negative, energizes ENK1 if generator ready

EZ130X1:A15-EZX47:9-EN100X1:9

partner of PW\_ON\_PO

0V/+15V (pulled up by relay coil EN100 K2, fed by PW\_ON\_PO), low active, +15V startup phase, 740mV when energized

#### PW\_ON\_PO

supply relay power on positive,

EZ130X1:C15-EZX47:4-EN100X1:4

partner of PW\_ON\_NG

+15V

#### RC\_ON/

rotor control on, low speed rotor control only

EZ150X1:A25-EZX51:1 backpanel version 4512 108 05983

EZ150X1:A25-EZX51:1-EZX151:1 backpanel versions 4512 108 05984 + 4512 108 09361/2

measuring point EYAX28

#### RC\_RD/

rotor control ready, low speed rotor control only

EYAX1:9-EXZ51:9-EZ150X1:C25 backpanel version 4512 108 05983

EYAX1:9-EXZ51:9-EZX151:9-EZ150X1:C25 backpanel versions 4512 108 05984 + 4512 108 09361/2

measuring point EYAX25

#### RC\_ST\_2/

rotor control stator 2

EZ150X1:A26-EZX16:1-EWGX14:1 low speed rotor control

EY100X3:1-EWGX14:1 high speed rotor control

#### RC\_ST\_3/

rotor control stator 3

EZ150X1:C26-EZX16:2-EWGX14:2-EWGX15:1 low speed rotor control

EY100X3:2-EWGX14:2-EWGX15:1 high speed rotor control

#### RD\_MN\_ON

ready mains power on

C100X2:50-C300X4:50-C300X1:14-EZX46:14-EZX47:7-EN100X1:7 Optimus RAD – R/F

CB100X10:4- EZX46:14-EZX47:7-EN100X1:7 Optimus C

#### RD\_PR\_X

#### NR\_PR\_X/

ReaDy preparing for X-ray or Not Ready preparing for X-ray

EZ139X1:A3-EZX23:3-EZX45:4-EZX46:4-C300X1:4- -EWAX51:4-EWAX52:4-EWA100X2:A24-

driven by CU or other system components

measuring point: EZX83

part of: signal bus

0V/+15V high active signal;

must be measured against PO\_0V in a Duo Diagnost system which feeds the signal bus

#### REL\_CH1

release (reset integrator) chamber 1

EZ150X1:C6-EZX21:4

0V/+15V, typically +13V, high active

#### REL\_CH2

release (reset integrator) chamber 2

EZ150X1:A6-EZX22:4

0V/+15V, typically +13V, high active

#### REL\_CH3

release (reset integrator) chamber 3

EZ150X1:C12-EZX31:4

0V/+15V, typically +13V, high active

#### REL\_CH4

release (reset integrator) chamber 4

EZ150X1:A12-EZX32:4

0V/+15V, typically +13V, high active

#### REL\_CH5

release (reset integrator) chamber 5

also used as EXON signal for DSI

EZ150X1:C18-EZX41:4

0V/+15V, typically +13V, high active

#### RESET\_1

external reset

resets incorrect exposure indication, 5-min fluoro buzzer, errors

EWBX22:7-EWB100X1:C23

0V/+26V low active

#### RESET\_C/

internal RESET command for function units

EZ119X2:A6- EZ130X2:A6-~~EZ139X2:A6~~-EZ150X2:A6-EZX52:3-EZX45:3-EZX46:3-C300X1:3-  
-EZX51:10-EZX73-EWAX51:3-EWAX52:3-EWA100X1:A6-EWBX51:3-EWBX52:3-EWB100X1:A6-  
-EZX151:10      backpanel versions 4512 108 05984 + 4512 108 09361/2

0V/+5V

measuring point EZX73

driven by CU, active (low) if: EZ139 S1 activated, RESET\_SW/ on signal bus active,  
threatening power supply drop in, watchdog alarm, switch on or warm-start,  
resets FU's

part of: XS/XRG bus

#### RESET\_SW/

signal bus reset, generator reset with turn-on or push of turn-on button as warm-start

EZX23:2-EZX44:6-EZ139X1:A2

0V/+15V low active;

must be measured against PO\_0V in a Duo Diagnost system which feeds the signal bus  
time constant >= 200ms

resets CU only

measuring point: EZX81

part of: signal bus

#### RF\_0V\_CH1

0V reference value measuring chamber 1

EZX21:8-EZ150X1:C8

differential signal with SIGN\_CH1

#### RF\_0V\_CH2

0V reference value measuring chamber 2

EZX22:8-EZ150X1:A8

differential signal with SIGN\_CH2

#### RF\_0V\_CH3

0V reference value measuring chamber 3

EZX31:8-EZ150X1:C14

differential signal with SIGN\_CH3

#### RF\_0V\_CH4

0V reference value measuring chamber 4

EZX32:8-EZ150X1:A14-

differential signal with SIGN\_CH4

#### RF\_0V\_CH5

0V reference value measuring chamber 5

EZX41:8-EZ150X1:C20

differential signal with SIGN\_CH5

#### RG\_DV\_1

registration device 1 selected

EWA100X1:C4-EWAX1:5

EWB100X1:C4-EWBX1:5

#### RG\_DV\_2

registration device 2 selected

EWA100X1:A7-EWAX2:5

EWB100X1:A7-EWBX2:5

#### RG\_DV\_3

registration device 3 selected

EWA100X1:A9-EWAX3:5

EWB100X1:A9-EWBX3:5

#### RG\_DV\_4

registration device 4 selected

EWA100X1:A11-EWAX4:5

EWB100X1:A11-EWBX4:5

#### RG\_DV\_SL\_1

registration device selection 1

cassette / camera switchover signal

EWBX21:1-EWB100X1:C18

0V/+26V low active

partner of RG\_DV\_SL\_2, only one of these should be low active at a time

#### RG\_DV\_SL\_2

registration device selection 2

camera / cassette switchover signal

EWBX21:2-EWB100X1:A19

0V/+26V low active

partner of RG\_DV\_SL\_1, only one of these should be low active at a time

#### RM\_DR\_0V

room door contact 0V

EZ150X1:C28-EZX1:10-EWGX1:10-EWGX2:10-EWGX3:10

release 2 generators only, not used release 3 RAD-R/F and Optimus C

partner of RM\_DR\_CT signal release 2 RAD generators only

0V/+26V low active, detects room door contact signal short circuit at release 2 RAD generators during turn-on

#### RM\_DR\_CT

room door contact

EZ150X1:A28-EZX1:8-EWGX1:8=EWGX2:8=EWGX3:8 backpanel versions 4512 108 05983/4

EZ150X1:A28-EZX45:8-EWBX51:8-EWBX52:8-EWBX22:8-EZX1:8-EWGX1:8=EWGX2:8=EWGX3:8 back-panel versions 4512 108 09361/2

partner of RM\_DR\_0V signal release 2 RAD generators only

0V/+26V low active = door closed

#### RX\_EX

request exposure

C300X3 :7-:3

desk hand switch exposure request

+15V standby, 0V when exposure requested

#### RQ\_M1\_X/

request mode 1 (fluoro)

Optimus C only, not used

EZX23:9-EZ139X1:C4

RQ\_M2\_X/  
request mode 2 (exposure)  
Optimus C only, not used  
EZX23:22-EZ139X1:C5

RQ\_M3\_X/  
request mode 3  
Optimus C only, not used  
EZX23:10-EZ139X1:C7

RQ\_PR  
request preparation  
C300X3 :5-:9  
desk hand switch preparation request  
+15V standby, 0V during prep request

RQ\_SN\_X/  
request synchronization of X-ray, exposure request signal  
EZX23:16-EZX45:12-EZX46:12-C300X1:12-EZ139X1:C3-  
-EWAX51:12-EWAX52:12-EWA100X2:A25-EWBX51:12-EWBX52:12-EWB100X2:A25-  
measuring point: EZX84  
0V/+15V low active  
must be measured against PO\_0V in a Duo Diagnost system which feeds the signal bus  
part of: signal bus

RQ\_XG\_EX  
request X-ray generator for exposure  
EWAX1:1- EWAX1:2- EWAX1:3- EWAX1:4-EWA100X1:A3  
EWBX1:1- EWBX1:2- EWBX1:3- EWBX1:4-EWB100X1:A3  
0V/+26V low active, high if waiting for sync contact  
partner of XG\_RD\_EX for grid sync (20-21)

RQ\_XG\_FL  
request X-ray generator for fluoroscopy  
EWAX1:6-EWAX2:6- EWAX3:6- EWAX4:6-EWA100X1:A5   not possible with WA  
EWBX1:6-EWBX2:6- EWBX3:6- EWBX4:6-EWB100X1:A5  
0V/+26V low active

RQ\_XG\_PR\_1  
request X-ray generator for preparation  
EWAX1:3-EWA100X1:A4  
EWBX1:3-EWB100X1:A4  
0V/+26V low active

RQ\_XG\_PR\_2  
request X-ray generator for preparation  
EWAX2:3-EWA100X1:C6  
EWBX2:3-EWB100X1:C6  
0V/+26V low active

RQ\_XG\_PR\_3  
request X-ray generator for preparation  
EWAX3:3-EWA100X1:C8  
EWBX3:3-EWB100X1:C8  
0V/+26V low active

RQ\_XG\_PR\_4  
request X-ray generator for preparation  
EWAX4:3-EWA100X1:C10  
EWBX4:3-EWB100X1:C10  
0V/+26V low active

RX\_CAN\_1  
system CAN 1 optional  
EZX44:3-EZ139X1:C15



RX\_CAN\_2  
system CAN 2 optional  
EZX43:1-EZX44:11-

S\_CAN\_GND  
system CAN bus ground  
EZ139X1:C17-EZX42:3/6-EZX43:3/6-EZX44:9-(-EZX44:9- EZX44:1- to GND via function programming plug 4512  
130 54441 Optimus RAD only)  
part of: system CAN

S\_CAN\_L  
system CAN low active  
EZ139X1:C16-EZX42:2-EZX43:2  
+2.5VDC standby, +1.5VDC during communication  
part of: system CAN

S\_CAN\_H  
system CAN high active  
EZ139X1:A16-EZX42:7-EZX43:7  
+2.5VDC standby, +3.2VDC during communication  
part of: system CAN

S\_CAN\_PO  
system CAN supply  
EZX44:4-EZX42:9-EZX43:9-EZ139X1:A17-(-EZX44:12-EZX44:9 supply via function programming plug 4512 130  
54441 Optimus RAD only)  
typically +12V, Vcan  
part of: system CAN

SI\_PH/  
single phase identifier  
EN100X1:5-EZX47:5-EZ130X1:C14

SI\_PH\_ID  
single phase identifier  
EN100X1:5-EZX47:5-EZ130X1:C14

SIGN\_CH1  
dose signal of measuring chamber 1  
EZX21:7-EZ150X1:C7  
0...12V (24V out of range possible)  
differential signal with RF\_0V\_CH1

SIGN\_CH2  
dose signal of measuring chamber 2  
EZX22:7-EZ150X1:A7  
0...12V (24V out of range possible)  
differential signal with RF\_0V\_CH2

SIGN\_CH3  
dose signal of measuring chamber 3  
EZX31:7-EZ150X1:C13  
0...12V (24V out of range possible)  
differential signal with RF\_0V\_CH3

SIGN\_CH4  
dose signal of measuring chamber 4  
EZX32:7-EZ150X1:A13  
0...12V (24V out of range possible)  
differential signal with RF\_0V\_CH4

SIGN\_CH5  
dose signal of measuring chamber 5  
EZX41:7-EZ150X1:C19  
0...12V (24V out of range possible)  
differential signal with RF\_0V\_CH5

SL\_CO\_1  
select correction 1  
external patients size correction, slim patient  
EWA100X1:A32-EWAX24:8  
EWB100X1:A32-EWBX24:8  
0V/+26V low active for selection or when selected from generator desk

SL\_CO\_2  
select correction 2  
external patients size correction, stout patient  
EWA100X1:C32-EWAX24:9  
EWB100X1:C32-EWBX24:9  
0V/+26V low active for selection or when selected from generator desk

SL\_PG\_1  
select external APRT program 1  
EWA100X1:A28-EWAX23:1  
EWB100X1:A28-EWBX23:1  
0V/+26V low active for selection or when selected from generator desk

SL\_PG\_2  
select external APRT program 2  
EWA100X1:C28-EWAX23:2  
EWB100X1:C28-EWBX23:2  
0V/+26V low active for selection or when selected from generator desk

SL\_PG\_3  
select external APRT program 3  
EWA100X1:A29-EWAX23:3  
EWB100X1:A29-EWBX23:3  
0V/+26V low active for selection or when selected from generator desk

SL\_PG\_4  
select external APRT program 4  
EWA100X1:C29-EWAX23:4  
EWB100X1:C29-EWBX23:4  
0V/+26V low active for selection or when selected from generator desk

SL\_PG\_5  
select external APRT program 5  
EWA100X1:A30-EWAX23:5  
EWB100X1:A30-EWBX23:5  
0V/+26V low active for selection or when selected from generator desk

SL\_PG\_6  
select external APRT program 6  
EWA100X1:C30-EWAX23:6  
EWB100X1:C30-EWBX23:6  
0V/+26V low active for selection or when selected from generator desk

SL\_PG\_7  
select external APRT program 7  
EWA100X1:A31-EWAX23:7  
EWB100X1:A31-EWBX23:7  
0V/+26V low active for selection or when selected from generator desk

SL\_PG\_8  
select external APRT program 8  
EWA100X1:C31-EWAX23:8  
EWB100X1:C31-EWBX23:8  
0V/+26V low active for selection or when selected from generator desk

SL\_TO\_TM\_1  
select tomo time 1  
tomo time input from stand  
EWAX21:1-EWA100X1:A24  
0V/+26V low active

SL\_TO\_TM\_2  
select tomo time 2  
tomo time input from stand  
EWAX21:2-EWA100X1:C24  
0V/+26V low active

SL\_TO\_TM\_3  
select tomo time 3  
tomo time input from stand  
EWAX21:3-EWA100X1:A25  
0V/+26V low active

SL\_TO\_TM\_4  
select tomo time 4  
tomo time input from stand  
EWAX21:4-EWA100X1:C25  
0V/+26V low active

SL\_TO\_TM\_5  
select tomo time 5  
tomo time input from stand  
EWAX21:5-EWA100X1:A26  
0V/+26V low active

SL\_TO\_TM\_6  
select tomo time 6  
tomo time input from stand  
EWAX21:6-EWA100X1:C26  
0V/+26V low active

SL\_TO\_TM\_7  
select tomo time 7  
tomo time input from stand  
EWAX21:7-EWA100X1:A27  
0V/+26V low active

SL\_TO\_TM\_8  
select tomo time 8  
tomo time input from stand  
EWAX21:8-EWA100X1:C27  
0V/+26V low active

SL\_XG\_TO  
select X-ray generator for tomography  
EWAX11:3-EWAX12:3-EWA100X1:C18  
0V/+26V, low active

STOP\_X\_C/  
stop X-ray command, X-ray off from function units mA and dose rate control (on-board of CU)  
EZ119X2:A7-EZ130X2:A7- EZ139X2:A7-EZ150X2:A7-EZX52:4-  
0V/5V  
measuring point EZX75  
inactivates CTRL\_X\_C/  
EXOF exposure off command  
part of: XS/XRG bus

STU  
stator phase U  
EYAX2:2-EX1101 low speed rotor control single tube  
EYAX2:2-EWGK11:1-EWGK12:1=EWGK11:2=EWGK12:2 low speed two tubes  
EY100X46:2-EX1101 high speed rotor control versions 4512 104 33791/2 or 71401..6 single tube  
EY100X46:2-EWGK11:1-EWGK12:1=EWGK11:2=EWGK12:2 high speed rotor control  
versions 4512 104 33791/2 or 71401..6 two tubes  
EY100X51-EX1101 high speed rotor control version 4512 104 71421/61 single tube  
EY100X51--EWGK11:1-EWGK12:1=EWGK11:2=EWGK12:2 high speed rotor control  
version 4512 104 71421/61 two tubes

## STV

stator phase V = common

EYAX2:3-EX1102 low speed rotor control single tube

EYAX2:3-EWGK11:3-EWGK12:3=EWGK11:4=EWGK12:4 low speed two tubes

EY100X47:1-EX1102 high speed rotor control versions 4512 104 33791/2 or 71401..6 single tube

EY100X47:1-EWGK11:3-EWGK12:3=EWGK11:4=EWGK12:4 high speed rotor control  
versions 4512 104 33791/2 or 71401..6 two tubes

EY100X52-EX1102 high speed rotor control version 4512 104 71421/61 single tube

EY100X52--EWGK11:3-EWGK12:3=EWGK11:4=EWGK12:4 high speed rotor control  
version 4512 104 71421/61 two tubes

## STW

stator phase W

EYAX2:4-EX1103 low speed rotor control single tube

EYAX2:4-EWGK11:5-EWGK12:5=EWGK11:6=EWGK12:6 low speed two tubes

EY100X47:2-EX1103 high speed rotor control versions 4512 104 33791/2 or 71401..6 single tube

EY100X47:2-EWGK11:5-EWGK12:5=EWGK11:6=EWGK12:6 high speed rotor control  
versions 4512 104 33791/2 or 71401..6 two tubes

EY100X53-EX1103 high speed rotor control version 4512 104 71421/61 single tube

EY100X53--EWGK11:5-EWGK12:5=EWGK11:6=EWGK12:6 high speed rotor control  
version 4512 104 71421/61 two tubes

## SW\_BU\_1

switch bucky 1 ready (WA + WB)

EWAX11:10-EWA100X1:C19

EWBX11:10-EWB100X1:C19

part of: bucky ready contact

0V/+26V low active

## SW\_BU\_2

switch bucky 2 ready (WA only)

EWAX12:10-EWA100X1:A21

part of: bucky ready contact

0V/+26V low active

## SW\_OF\_FD\_1

switch off field 1

format size correction < 14cm or if cone in use serial changer chamber

EWBX13:5-EWB100X1:C21

0V/+26V low active

## SW\_ON\_FD\_3

switch on field 3

format size correction > 24x24cm serial changer chamber

EWBX13:7-EWB100X1:A22

0V/+26V low active

## SW\_PR\_FL\_1

switch preparation or fluoro 1

contact to drive an external prep or fluoro indication lamp

EWBX22:2-EWB100X1:C13

partner of COM\_EX\_CD

## SW\_SF\_CF\_1

switch side field to central field bucky measuring chamber (WA + WB)

EWAX11:1-EWA100X1:A18

EWBX11:1-EWB100X1:A18

cassettes < 23cm

0V/+26V low active

## SW\_SF\_CF\_2

switch side field to central field bucky measuring chamber 2 (WA only)

EWAX12:1-EWA100X1:A20

cassettes < 23cm

0V/+26V low active

#### SW\_TO\_1

switch tomography 1 ready  
EWAX11:5-EWA100X1:A19  
part of: tomo ready contact  
0V/+26V low active

#### SW\_TO\_2

switch tomography 2 ready  
EWAX12:5-EWA100X1:C20  
part of: tomo ready contact  
0V/+26V low active

#### SW\_UN\_EX

radiation indication  
EZ150X1:A29-EZX1:4-EWGX1:4  
partner of CM\_SW, potential free contact

#### SW\_UN\_EX\_1

radiation indication  
(EWGX1:4)=EWGX2:4  
partner of CM\_SW, potential free contact

#### SW\_UN\_EX\_1

switch radiation indication 1  
contact to drive an external X-ray indication lamp  
EWBX22:4-EWB100X1:C14  
partner of COM\_EX\_CD

#### SW\_UN\_EX\_2

radiation indication  
(EWGX1:4)=EWGX3:4  
partner of CM\_SW, potential free contact

#### SW\_XG\_RD\_1

switch generator ready 1  
contact to drive an external ready indication lamp  
EWBX22:1-EWB100X1:A13  
partner of COM\_EX\_CD

#### SW\_WN\_FL\_1

switch warning fluoro 1  
contact to drive an external fluoro warning indication lamp (> 5 minutes)  
EWBX22:3-EWB100X1:A14  
partner of COM\_EX\_CD

#### TB\_2/

tube 2 selected  
EZ130X1:A13-EZX11:2-EWGX11:2  
+26V not selected, 800mV selected

#### TB\_2\_RT

tube 2 return signal, tube selection check  
EWGX11:3-EZX11:3-EZ130X1:A10  
+26V not selected, 800mV selected

#### TB\_3/

tube 3 selected  
EZ130X1:C13-EZX11:5-EWGX11:5-EWGX12:2  
+26V not selected, 800mV selected

#### TB\_3\_RT

tube 3 return signal, tube selection check  
E2WGX11:3-E1WGX12:3-E1WGX11:6-EZX11:6-EZ130X1:C10  
+26V not selected, 800mV selected

#### TB\_CU\_FR\_NG

tube current frequency negative

EG100X14:14-EZX35:14-EZ119X1:BZ32

-14V against ground, frequency: 1 kHz = 2 mA, 0...1500mA 500kHz/A

differential signal with TB\_CU\_FR\_PO

#### TB\_CU\_FR\_PO

tube current frequency positive

EG100X16:6-EZX35:6-EZ119X1:BZ30

-14V against ground, frequency: 1 kHz = 2 mA, 0...1500mA 500kHz/A

differential signal with TB\_CU\_FR\_NG

#### TH\_OL

tube housing overload

NTC temperature measurement in tube housing (not yet available)

EZ130X1:A12-EZX3:6-EWG7:6-EWG8:6-EWG9:6 backpanel version 4512 108 05983

EZ130X1:A12-EZX3:3-EWG7:3-EWG8:3-EWG9:3 backpanel versions 4512 108 05984 + 4512 108 09361/2

4.4V...1.5V = 20...100 degrees C

+5V when TH\_OL\_SW + CM\_TH\_SW connection open, +2V when closed

partner of CM\_TH

#### TH\_OL\_SW/

tube housing overload switch

EZ130X1:A11-EZX3:3-EWG7:3-EWG8:3-EWG9:3 backpanel version 4512 108 05983

EZ130X1:A11-EZX3:6-EWG7:6-EWG8:6-EWG9:6 backpanel versions 4512 108 05984 + 4512 108 09361/2

0V...1.7V = short circuit, 1.7V...3.3V = closed, >3.3V open

partner of CM\_TH\_SW

#### TOMO\_PG

tomo mode programmed

EWA100X1:A17-EWAX22:9

common line for tomo trajectory selection TO\_PG\_1...8 to stand, potential free

#### TO\_PG\_1

tomo program 1

EWA100X1:A13-EWAX22:1

tomo trajectory selection, potential free contact with TOMO\_PG

#### TO\_PG\_2

tomo program 2

EWA100X1:C13-EWAX22:2

tomo trajectory selection, potential free contact with TOMO\_PG

#### TO\_PG\_3

tomo program 3

EWA100X1:A14-EWAX22:3

tomo trajectory selection, potential free contact with TOMO\_PG

#### TO\_PG\_4

tomo program 4

EWA100X1:C14-EWAX22:4

tomo trajectory selection, potential free contact with TOMO\_PG

#### TO\_PG\_5

tomo program 5

EWA100X1:A15-EWAX22:5

tomo trajectory selection, potential free contact with TOMO\_PG

#### TO\_PG\_6

tomo program 6

EWA100X1:C15-EWAX22:6

tomo trajectory selection, potential free contact with TOMO\_PG

#### TO\_PG\_7

tomo program 7

EWA100X1:A16-EWAX22:7

tomo trajectory selection, potential free contact with TOMO\_PG

#### TO\_PG\_8

tomo program 8

EWA100X1:C16-EWAX22:8

tomo trajectory selection, potential free contact with TOMO\_PG

#### TO\_PG\_SL

tomo program selected

EWA100X1:C17-EWAX22:10

tomo APR selected = closed, overriding = open, potential free contact with TOMO\_PG

#### TP\_HT\_GND

temperature high tension tank ground

EZ130X1:A19-EZX35:12-EG100X14:4-

partner of TP\_HT\_SG

#### TP\_HT\_SG

temperature signal high tension tank

NTC in high tension tank oil

EG100X14:12-EZX35:4-EZ130X1:C19-

4.4V...1.5V = 20...100 degrees C

+25 \_C(12kW)...+100 \_C(950 W)

partner of TP\_HT\_GND

#### V15C

(S\_CAN\_PO) backpanel version 4512 108 05983 only

system CAN supply

EZX42:9-EZX43:9-EZX44:4-EZ139X1:A17

Vcan

part of: system CAN

#### V15S

signal bus supply, backpanel version 4512 108 05983 only

EZX23:13/25-EZX44:5-EZX45:7-EZ130X1:AC6-EWAX51:7-EWAX52:7-EWA100X2:AC27

+15V Vsgn

part of: signal bus

#### VO\_CR\_IF\_0

density voltage correction II format dependent 10"

EWBX13:3-EWB100X1:C22

0V/+26V low active

#### VO\_CR\_IF\_1

density voltage correction II format dependent 5" / 6"

EWBX13:9-EWB100X1:A23

#### X\_ACT/

X-ray active signal bus

EZ139X1:A5-EZX23:5-EZX45:6-EWAX51:6-EWAX52:6-EWA100X2:C24-EWBX51:6-EWBX52:6-EWB100X2:C24

driven by CU if X\_ACT\_S/ was sent from FU-kV or during fluoro, old: EXON signal

measuring point: EZX86

part of: signal bus

0V/+15V low active

must be measured against PO\_0V in a Duo Diagnost system which feeds the signal bus

#### X\_ACT\_S/

X-Ray active signal

kV > 75% nominal value driven by FU-kV or fluoroscopy high tension on driven by CU

EZ119X2:A8-EZ130X2:A8-EZ139X2:A8-EZ150X2:A8-EZX52:5-EZX77

0V/+5V

measuring point EZX77

part of: XS/XRG bus, controls X\_ACT/ status

#### XG\_RD\_EX\_1

X-ray generator ready for exposure request  
grid / sync release signal  
EWA100X1:C3-EWAX1:2  
EWAB100X1:C3-EWBX1:2  
0V/+26V low active  
partner of RQ\_XG\_EX for grid sync (20-21)

#### XG\_RD\_EX\_2

X-ray generator ready for exposure request  
grid / sync release signal  
EWA100X1:A6-EWAX2:2  
EWB100X1:A6-EWBX2:2  
0V/+26V low active  
partner of RQ\_XG\_EX for grid sync (20-21)

#### XG\_RD\_EX\_3

X-ray generator ready for exposure request  
grid / sync release signal  
EWA100X1:A8-EWAX3:2  
EWB100X1:A8-EWBX3:2  
0V/+26V low active  
partner of RQ\_XG\_EX for grid sync (20-21)

#### XG\_RD\_EX\_4

X-ray generator ready for exposure request  
grid / sync release signal  
EWA100X1:A10-EWAX4:2  
EWB100X1:A10-EWBX4:2  
0V/+26V low active  
partner of RQ\_XG\_EX for grid sync (20-21)